





PRINCIPES DE LA CONSTRUCTION
DES
ORGANES DES MACHINES.

RÉSISTANCE DES MATÉRIAUX
PIÈCES DES MACHINES — CALCUL DES RÉSISTANCES PASSIVES
CONSTRUCTION DES ENGRENAGS — MÉCANISMES DE MOUVEMENT.

PAR
F. REDTENBACHER,
DIRECTEUR DE L'ÉCOLE POLYTECHNIQUE DE CARLSRUHE
ET PROFESSEUR DU COURS DE CONSTRUCTION DE MACHINES À CETTE ÉCOLE.

ÉDITION FRANÇAISE.

ATLAS DE 45 PLANCHES.



HEIDELBERG.
F. BASSERMANN, ÉDITEUR.

PARIS.

LIBRAIRIE POLYTECHNIQUE DE J. BAUDRY, ÉDITEUR.

15 RUE DES SAINTS-PÈRES.

MÊME MAISON A LIÈGE.

1872.

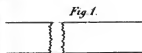


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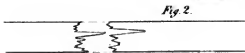


Fig. 2.



Fig. 3.



Fig. 4.

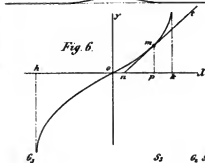


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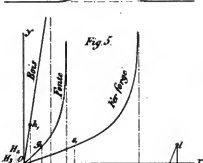


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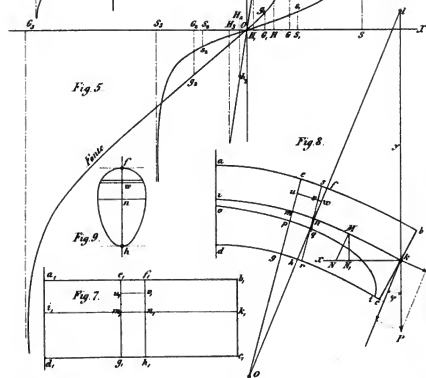


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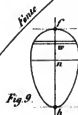


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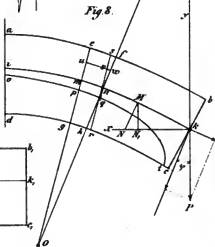


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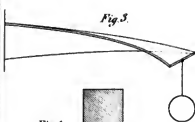


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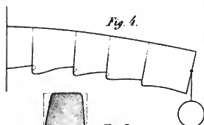


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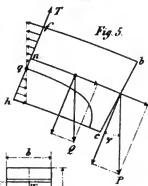


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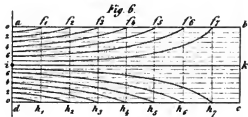


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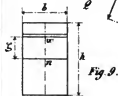


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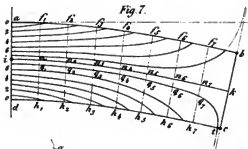


Fig. 7.



Fig. 10.

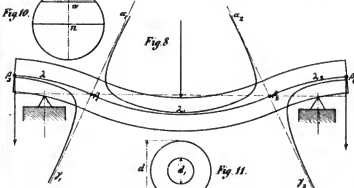


Fig. 8.



Fig. 11.



Fig. 12.



Fig. 13.

 $E = \frac{1}{6} b h^3$	 $E = \frac{1}{6h} \left\{ b_r h_r^3 + b (h^3 - h_r^3) \right\}$
 $E = \frac{1}{6} A^3$	 $E = \frac{1}{6h} \left\{ b_r h_r^3 + b (h^3 - h_r^3) \right\}$
 $E = \frac{\pi}{32} d^3$	 $E = \frac{1}{6h} \left\{ b_r h_r^3 + b_r (h_r^3 - h_r^3) + b (h^3 - h_r^3) \right\}$
 $E = \frac{\pi}{32} b h^3$	 $E = \frac{1}{6h} \left\{ h_r^4 + (h^2 - h_r^2) h_r + (h - h_r) h_r^3 \right\}$
 $z = \frac{1}{3} h$ $E = \frac{1}{12} b h^3$	 $E = \frac{1}{6h} \left\{ 0.589 d^4 + (h^2 - d^2) b + (h - d) b^3 \right\}$
 $z = \frac{3}{8} h$ $E = \frac{1}{24} b h^3$	 $E = \frac{1}{6h} \left\{ b (h^3 - h_r^3) + b_r (h_r^3 - h_r^3) \right\}$
 $E = \frac{\pi}{32} \frac{d_1^4 - d^4}{d}$	 $z = \frac{1}{2} \frac{b h^3 + b_r h_r^3 + 2 b_r h h_r}{b h + b_r h_r}$ $E = \frac{1}{32} \left\{ b \left[z^2 (z - h)^2 \right] + b_r \left[(z - h_r)^2 + (h_r - z)^2 \right] \right\}$
 $E = \frac{\pi}{32} \frac{b h^2 - b_r h_r^2}{h}$	 $z = \frac{1}{2} \frac{b h^3 + b_r h_r^3 + 2 b_r h h_r}{b h + b_r h_r}$ $E = \frac{1}{32} \left\{ b \left[(h_r - z)^2 - (h_r - z)^2 \right] + b_r \left[z^2 + (h_r - z)^2 \right] \right\}$
 $E = \frac{1}{6} b (h^3 - h_r^3)$	 $z = \frac{1}{2} \frac{b h^3 + b_r h_r^3 + 2 b_r h h_r}{b h + b_r h_r}$ $E = \frac{1}{32} \left\{ b \left[z^2 (z - h)^2 \right] + b_r \left[(z - h_r)^2 + (h_r - z)^2 \right] \right\}$

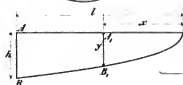
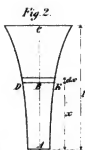
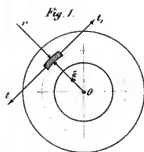


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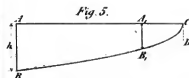


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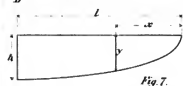


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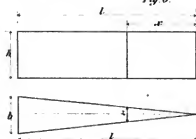
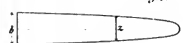


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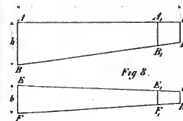
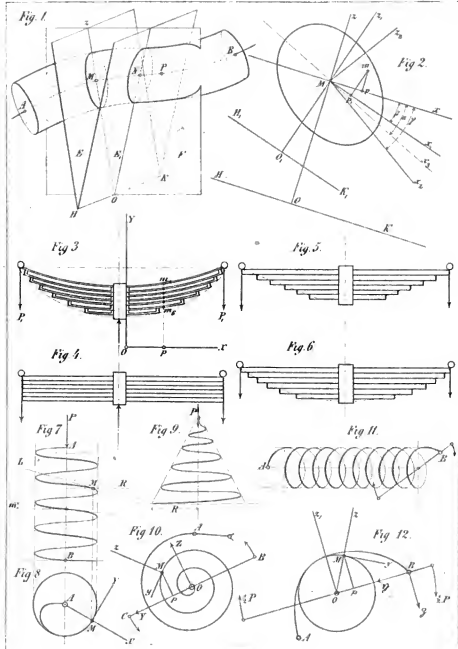
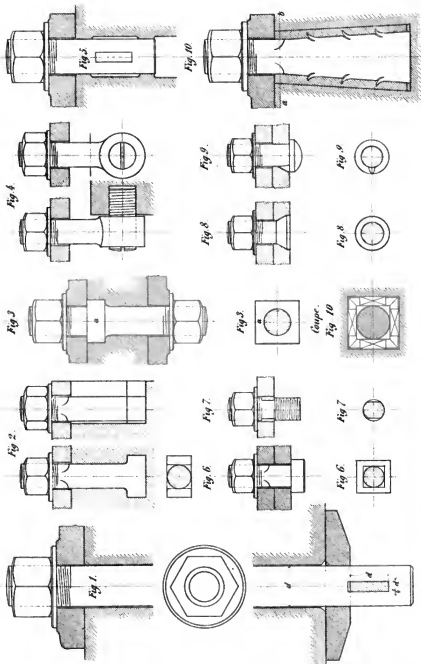
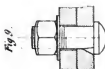
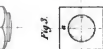
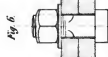
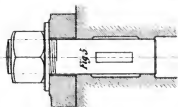
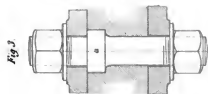
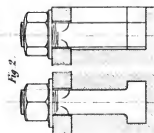
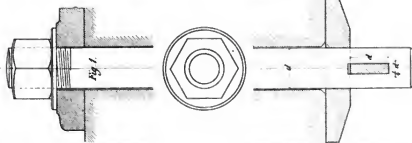


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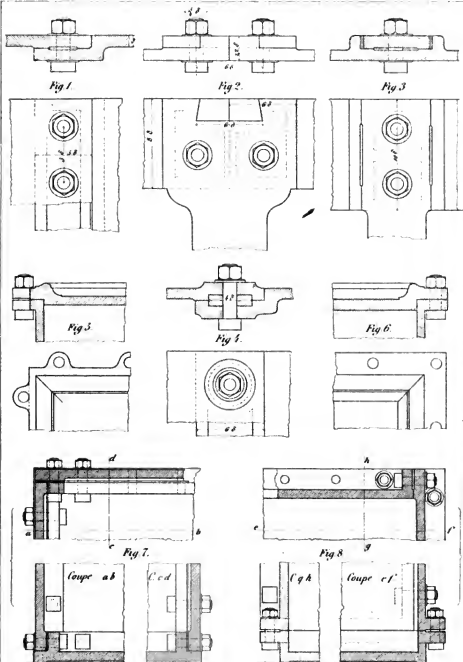








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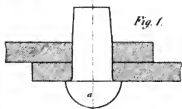


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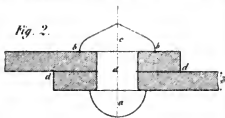


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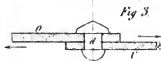


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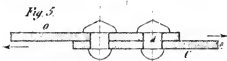


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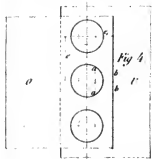


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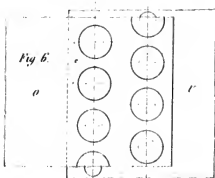


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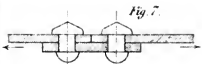


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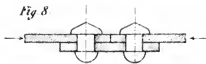


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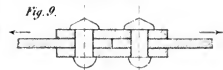


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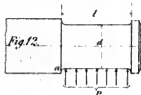


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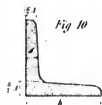
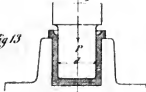


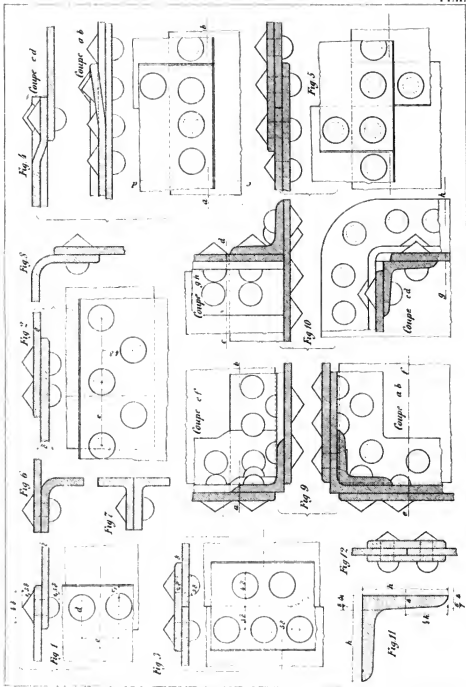
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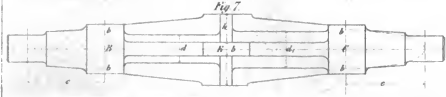
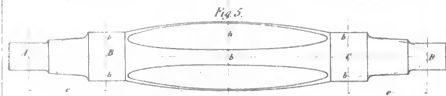
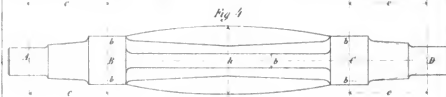
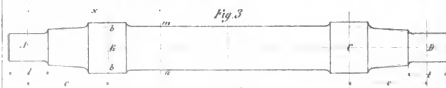
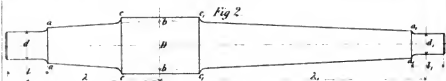
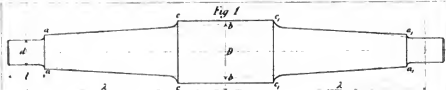


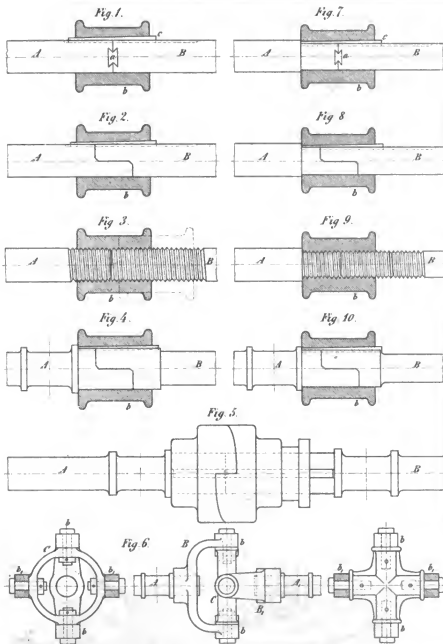
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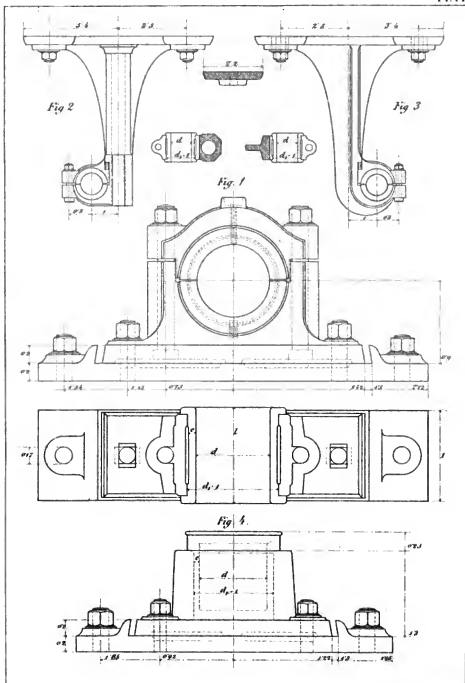
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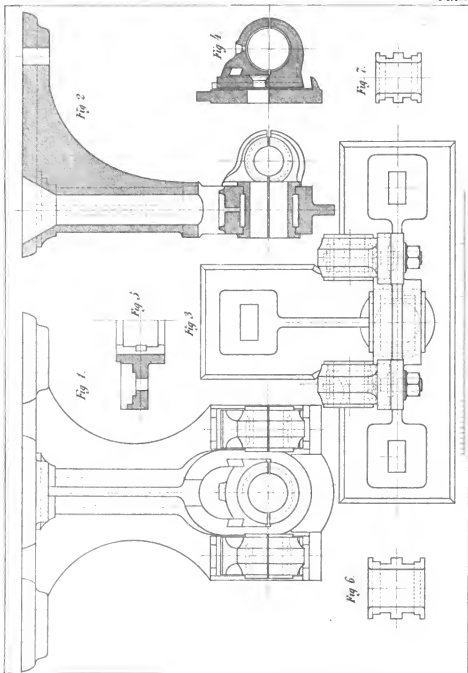


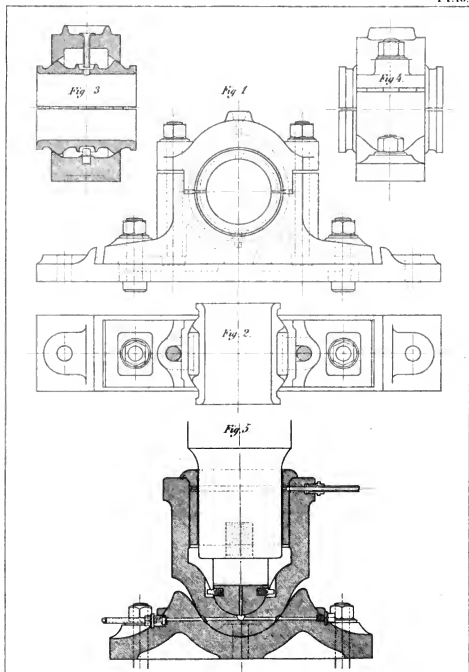












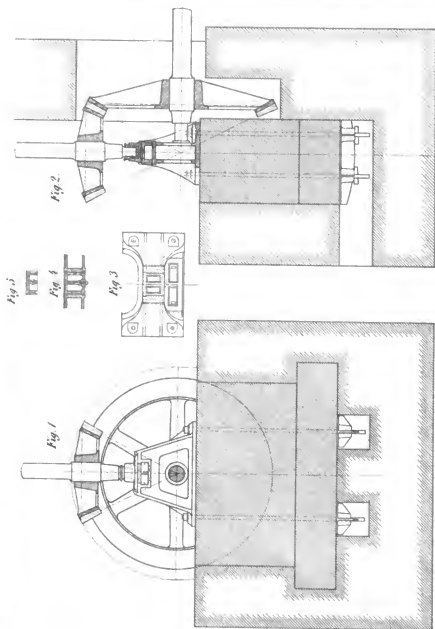


Fig 3

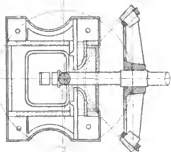


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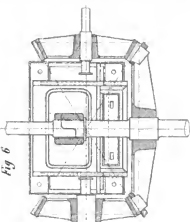


Fig 2

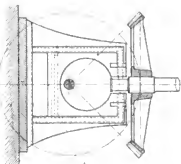


Fig 3

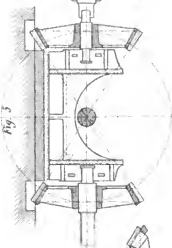


Fig 1

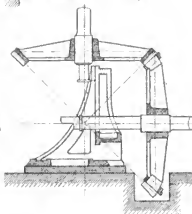
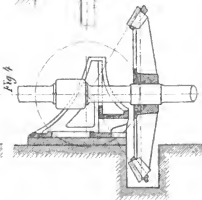
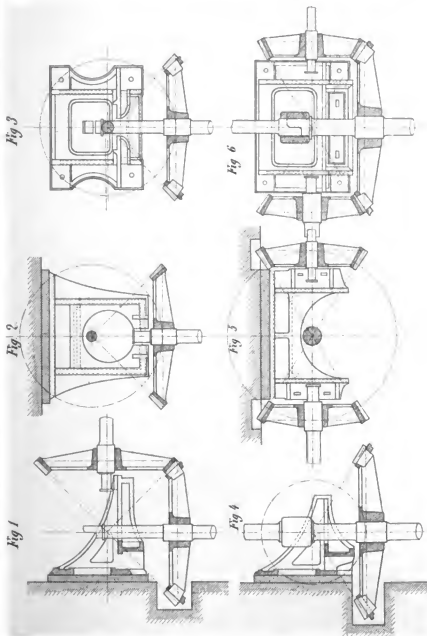


Fig 4





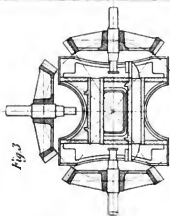


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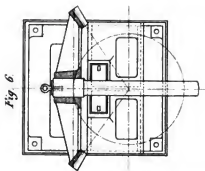


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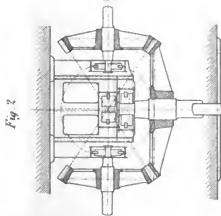


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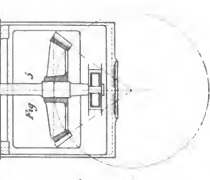


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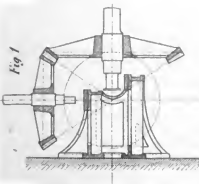


Fig. 1

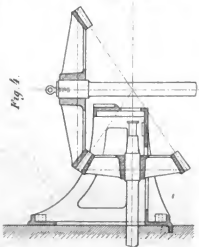
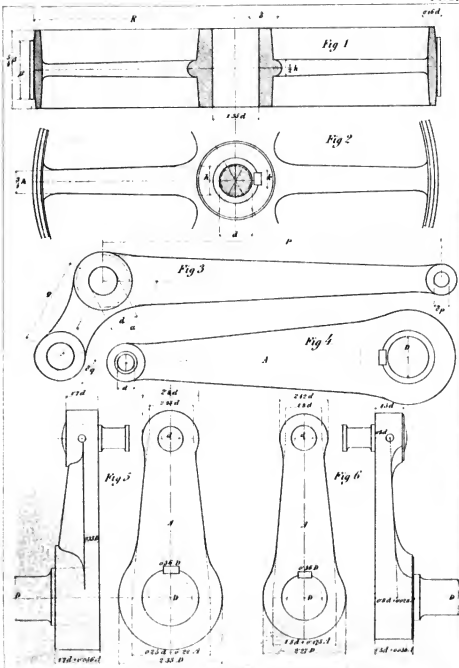
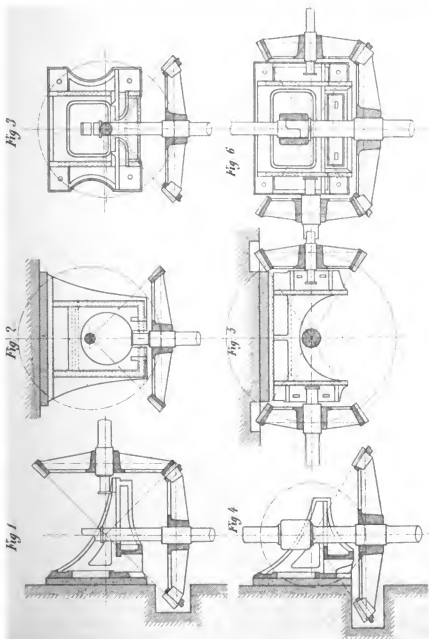
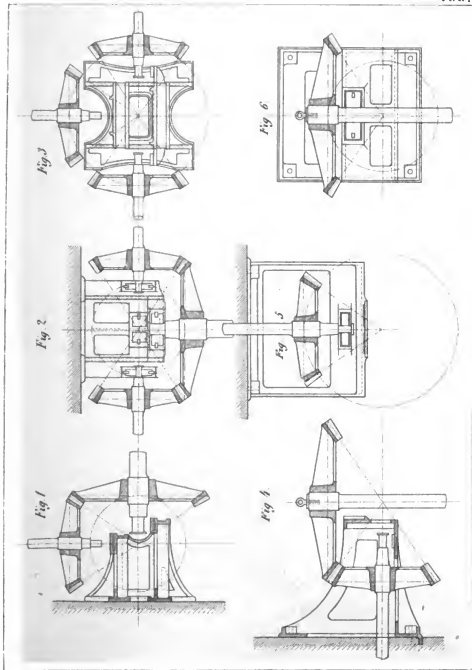
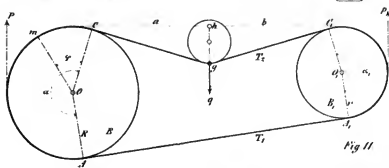
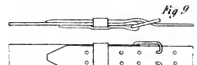
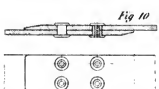
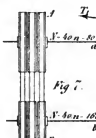
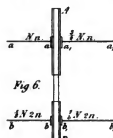
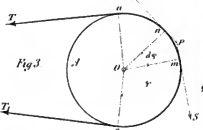
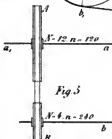
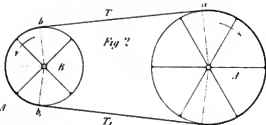


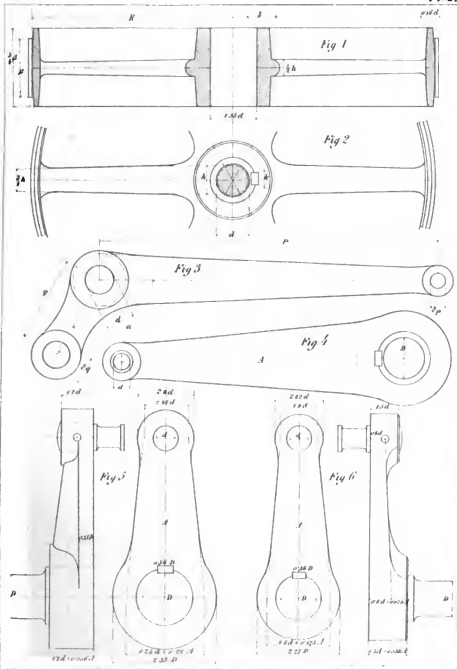
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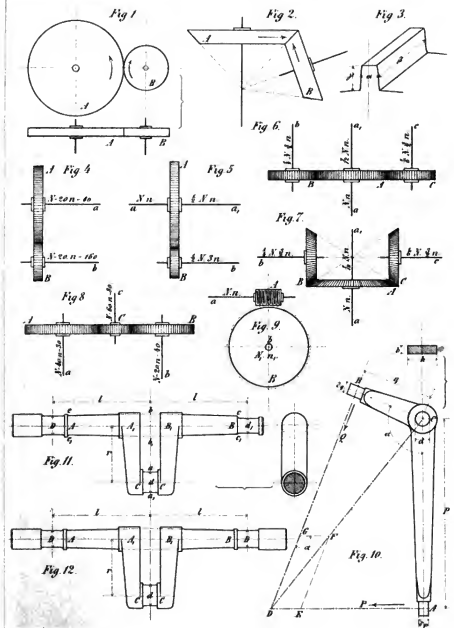


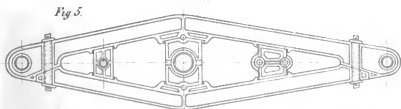
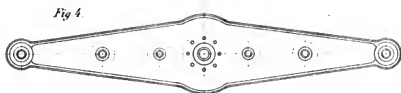
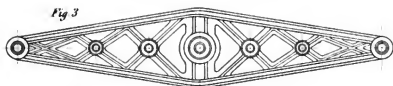
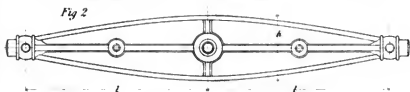












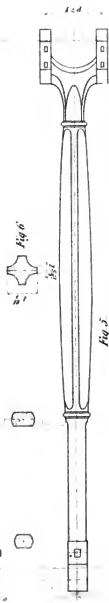
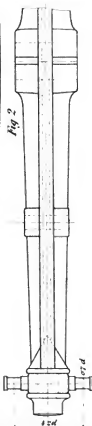
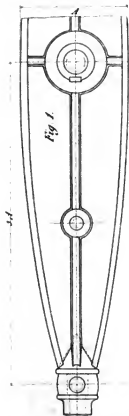
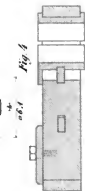
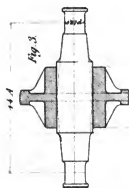


Fig 1.

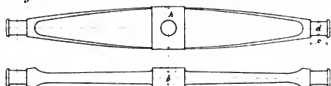


Fig 2.



Fig 4.

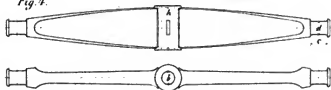


Fig 3.



Fig 5.

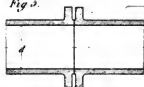


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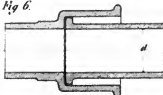


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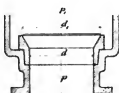


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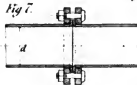


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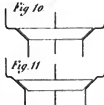


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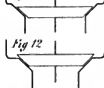


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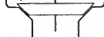


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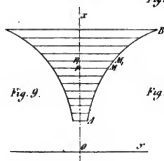


Fig 13.



Fig 14.

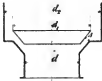
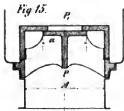


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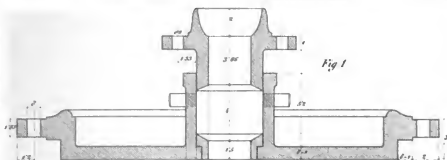


Fig. 1

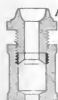


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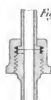


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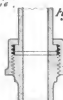


Fig. 4



Fig. 5

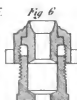


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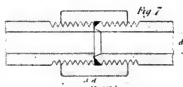


Fig. 7

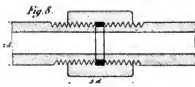


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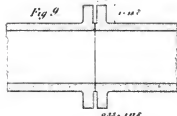


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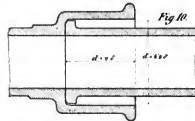


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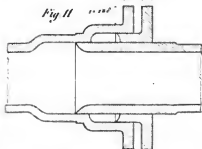


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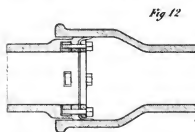
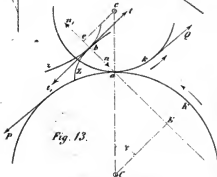
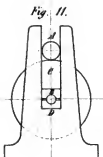
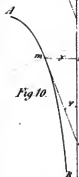
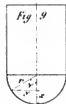
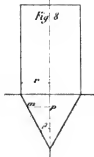
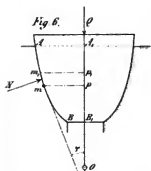
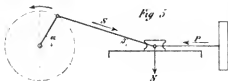
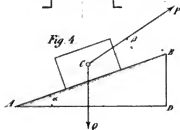
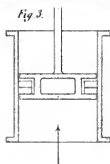
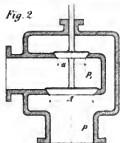
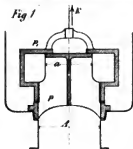
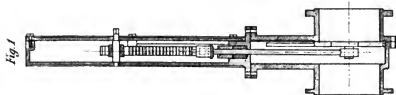
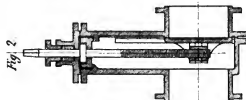
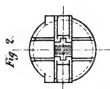
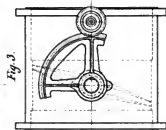
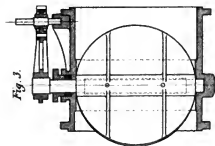
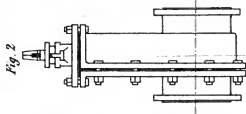
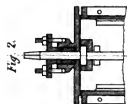
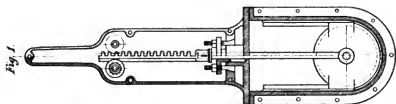
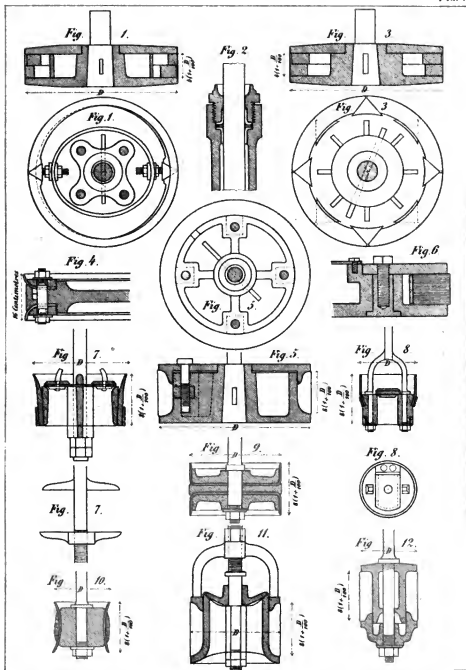


Fig. 12







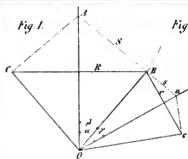


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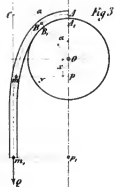
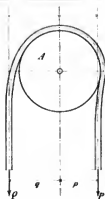


Fig. 4.

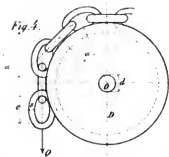


Fig. 5.

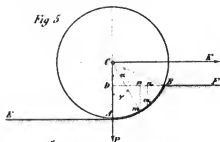


Fig. 6.

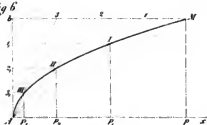


Fig. 7.

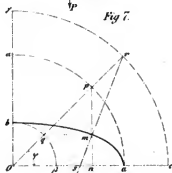


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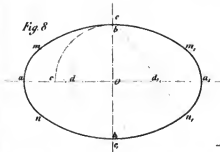
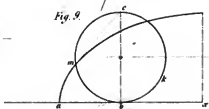


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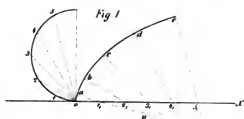


Fig 1

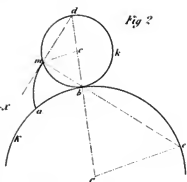


Fig 2

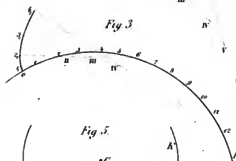


Fig 3

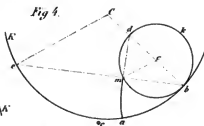


Fig 4

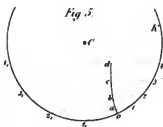


Fig 5

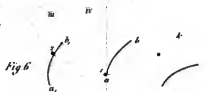


Fig 6

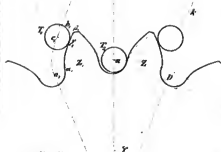


Fig 7



Fig 8

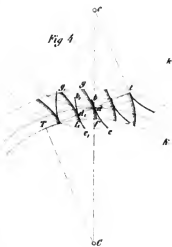
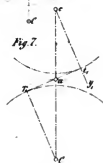
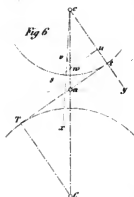


Fig 1.

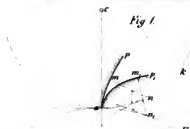


Fig 2

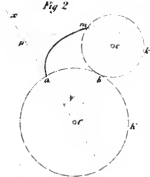


Fig 3



Fig 4

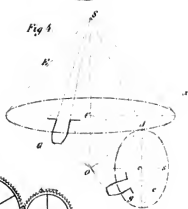


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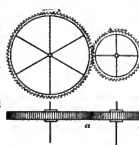


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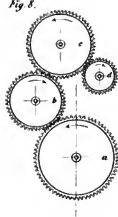
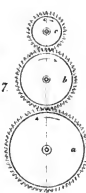


Fig 6.



Fig 7.



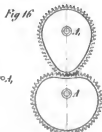
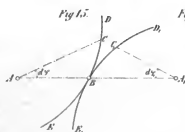
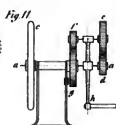
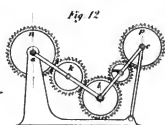
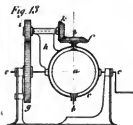
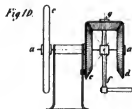
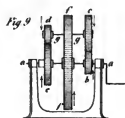
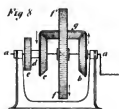
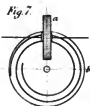
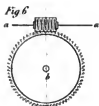
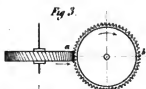
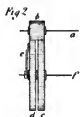
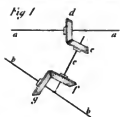


Fig 1

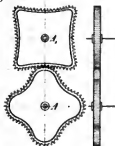


Fig 2

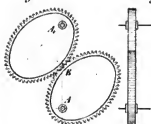


Fig 3

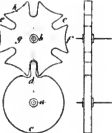


Fig 4



Fig 5



Fig 6

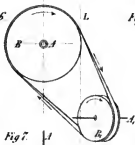


Fig 10

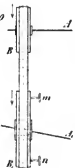


Fig 7

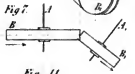


Fig 11



Fig 12

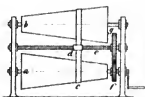


Fig 8

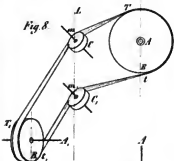


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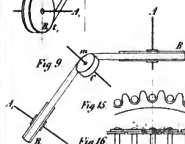


Fig 15



Fig 16



Fig 14



Fig 13

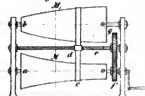


Fig. 1



Fig. 2



Fig. 3



Fig. 4

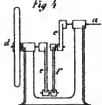


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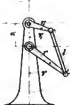


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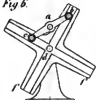


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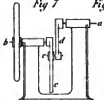


Fig. 8



Fig. 9

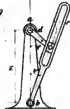


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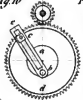


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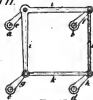


Fig. 12



Fig. 13



Fig. 14

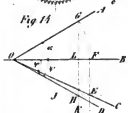


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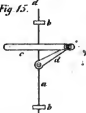


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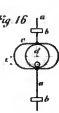


Fig. 17



Fig. 18

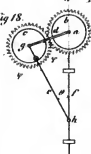


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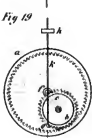
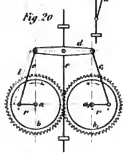
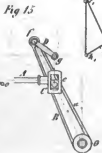
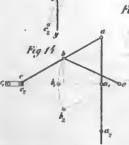
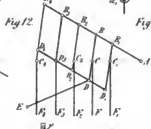
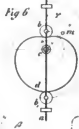
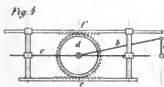
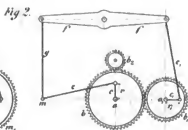
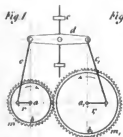


Fig. 20





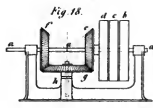
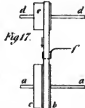
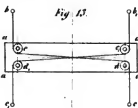
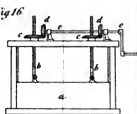
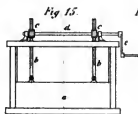
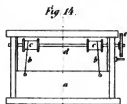
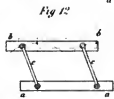
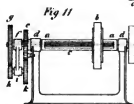
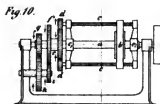
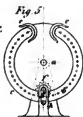
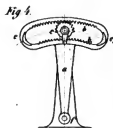
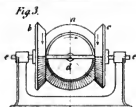
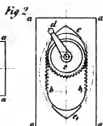
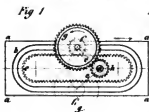


Fig 1

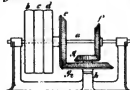


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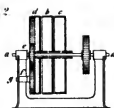


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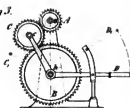


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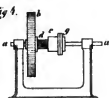


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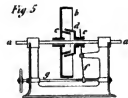


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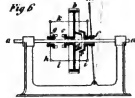


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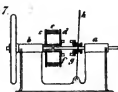


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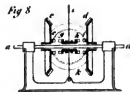


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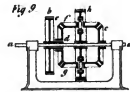


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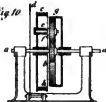
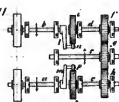
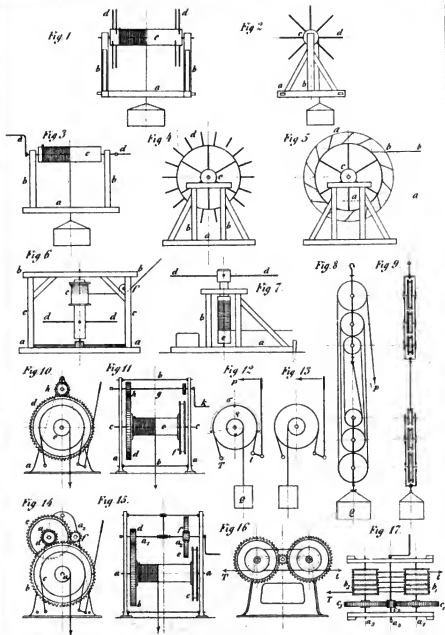


Fig 11





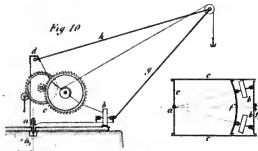
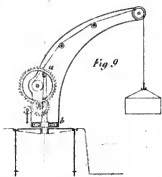
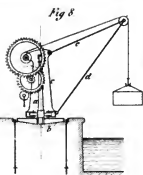
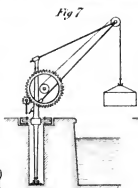
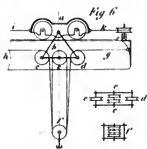
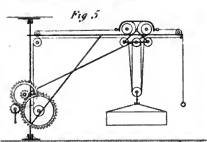
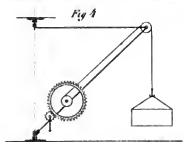
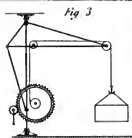
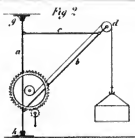
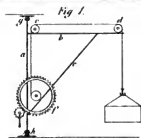


Fig 1

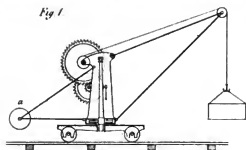


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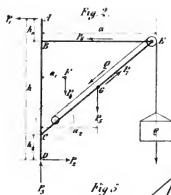


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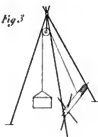


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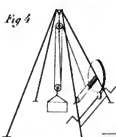


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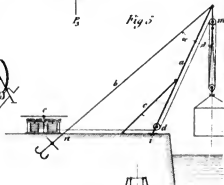


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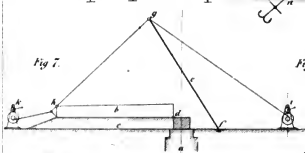


Fig 6

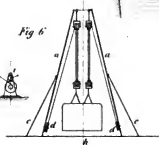


Fig 8

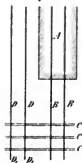


Fig 10

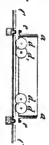
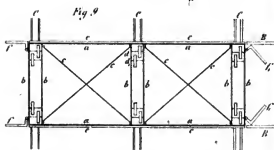


Fig 9



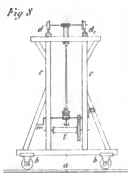
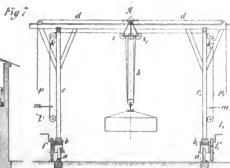
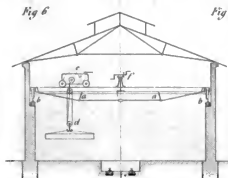
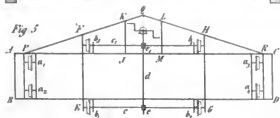
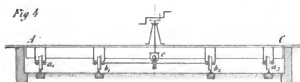
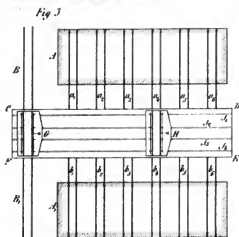
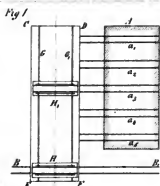


Fig 1

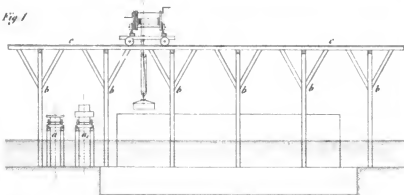


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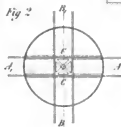


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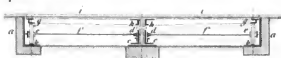
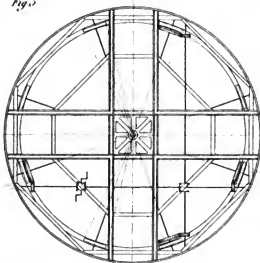


Fig 4



Fig 5



26.450



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